



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,847	08/26/2003	Chung-Che Tsai	MM4637	7010

7590 06/07/2004
ANDERSON KILL & OLICK, P.C.
1251 Avenue of the Americas
New York, NY 10020

EXAMINER

PRENTY, MARK V

ART UNIT PAPER NUMBER

2822

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,847

Applicant(s)

TSAI, CHUNG-CHE

Examiner

MARK V PRENTY

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-7,9-11,15-17, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 2-4,8,12-14 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

This Office Action is in response to the papers filed on August 26, 2003.

Claims 1, 5-7, 9-11, 15-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 (as described in the specification at pages 1-2) together with Chen et al. (United States Patent 6,686,667 – hereafter Chen).

With respect to independent claim 1, Prior Art Fig. 4 discloses a light sensitive semiconductor package, comprising: a chip carrier 21 having an upper surface and an opposite lower surface; at least one first chip 20 mounted on and electrically connected to the upper surface of the chip carrier; a first light permeable member 25; an encapsulant 23 formed on the chip carrier; and a second light permeable member 26 supported by the encapsulant and disposed above the first light permeable member.

The difference between claim 1 and Prior Art Fig. 4 is claim 1 further comprises a dam that is formed on the upper surface of the chip carrier, attached to the first light permeable member and surrounded by the encapsulant.

Chen teaches improving a light sensitive semiconductor package by providing it with a dam (castellation) that is formed on the upper surface of the chip carrier, attached to a light permeable member and surrounded by encapsulant (see the entire patent, including Fig. 1's dam 160).

It would have been obvious to one skilled in this art to provide Prior Art Fig. 4's light sensitive semiconductor package with a dam that is formed on the upper surface of chip carrier 21, attached to the first light permeable member 25 and surrounded by encapsulant 23, because Chen teaches that such a dam improves a light sensitive semiconductor device package.

Claim 1 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claim 5, Prior Art Fig. 4's first light permeable member 25 is an infrared filter (see the specification at page 2, line 2).

Claim 5 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claim 6, Prior Art Fig. 4's second light permeable member 26 is a lens (see the specification at page 2, line 2).

Claim 6 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claim 7, Prior Art Fig. 4's chip carrier 21 is a substrate (see the specification at the paragraph bridging pages 1 and 2).

Claim 7 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claims 9 and 10, Chen teaches that the dam and encapsulant can be made of the same material or of similar materials (see the Abstract and claim 1, for example).

Claims 9 and 10 are thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to independent claim 11, Prior Art Fig. 4 discloses a fabrication method of a light sensitive semiconductor package, comprising the steps of: preparing a chip carrier 21 having an upper surface and an opposite lower surface; mounting at

Art Unit: 2822

least one first chip 20 on the upper surface of the chip carrier and electrically connecting the first chip to the chip carrier; forming an encapsulant 23 on the chip carrier; and mounting first and second light permeable members 25 and 26 on the encapsulant to seal an opening of cavity 24, the second light permeable member disposed above the first light permeable member.

The difference between claim 11 and Prior Art Fig. 4 is claim 11 forms a dam on the upper surface of the chip carrier that is attached to the first light permeable member and surrounded by the encapsulant.

Chen teaches improving a light sensitive semiconductor package by providing it with a dam (castellation) that is formed on the upper surface of the chip carrier, attached to a light permeable member and surrounded by encapsulant (see the entire patent, including Fig. 1's dam 160).

It would have been obvious to one skilled in this art to form a dam on the upper surface of Prior Art Fig. 4's light sensitive semiconductor package's chip carrier 21 that is attached to the first light permeable member 25 and surrounded by encapsulant 23, because Chen teaches that such a dam improves a light sensitive semiconductor device package.

Claim 11 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claim 15, Prior Art Fig. 4's first light permeable member 25 is an infrared filter (see the specification at page 2, line 2).

Claim 15 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claim 16, Prior Art Fig. 4's second light permeable member 26 is a lens (see the specification at page 2, line 2).

Claim 16 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claim 17, Prior Art Fig. 4's chip carrier 21 is a substrate (see the specification at the paragraph bridging pages 1 and 2).

Claim 17 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

With respect to dependent claims 19 and 20, Chen teaches that the dam and encapsulant can be made of the same material or of similar materials (see the Abstract and claim 1, for example).

Claims 19 and 20 are thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 4 together with Chen.

Claims 2-4, 8, 12-14 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable over the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose the allowable light sensitive semiconductor packages taken as a whole, including the recited dam.

Art Unit: 2822

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

Mark Prenty
Mark V. Prenty
Primary Examiner